AMENDMENT TO THE DRAWING(S)

Fig. 3 is amended. The attached replacement sheet of the Drawings replaces the original sheet including Fig. 3.

REMARKS

The present Amendment is responsive to the non-final Office Action mailed October 10, 2007 in the above-identified application.

Claims 1-11 are canceled without prejudice or disclaimer. New claims 12-20 are added. Therefore, claims 12-20 are the claims currently pending in the present application.

Applicant thanks the Examiner for acknowledging the claim for foreign priority and the receipt of the priority document. Further, Applicant thanks the Examiner for acknowledging review and consideration of the references cited in the Information Disclosure Statements.

Objection to the Drawings

Fig. 3 is objected to on the ground that is should include the legend "Prior Art" because only that which is conventional is illustrated. Fig. 3 is amended.

Objection to Claim 11

Claim 11 is objected to on the ground that it fails to end with a period. Claim 11 is canceled without prejudice or disclaimer and therefore the objection is moot.

Rejection of Claims 1-7 and 9-11 under 35 U.S.C. § 103

Claims 1-7 and 9-11 are rejected under 35 U.S.C. § 103 as being obvious from Cho et al., "Generation of 90-nJ pulses with a 4-MHz repetition-rate Kerr-lens mode-locked Ti:Al_2O_3 laser operating with net positive and negative intracavity dispersion," Opt. Lett. 26, 560-562 (2001) (hereafter "Cho") in view of Szipocs et al., U.S. Patent No. 5,734,503.

Claims 1-7 and 9-11 are canceled without prejudice or disclaimer and therefore the rejection is moot.

Rejection of Claim 8 under 35 U.S.C. § 103

Claim 8 is rejected under 35 U.S.C. § 103 as being obvious from Cho and Szipocs in view of Cunningham, et al., U.S. Patent No. 5,701,327.

Claim 8 is canceled without prejudice or disclaimer and therefore the rejection is moot.

New Claims 12-20

New claims 12-20 are added so as more fully to claim patentable aspects of Applicant's invention. These claims are fully supported by Applicant's disclosure. Applicant's comments on the patentability of claim 12 are as follows.

Claim 12 requires a short-pulse laser arrangement comprising a plurality of mirrors, wherein the entire negative dispersion portion of the resonator is determined only by the dispersive mirrors with negative dispersion.

As described, for example, at Applicant's Specification, page 4, conventionally, prisms, gratings or other structures sometimes may be employed to provide a negative dispersion adjustment within the resonator but can lead to dispersions of a higher order, such that the constancy of the dispersion may only be attainable over a comparatively small range of wavelengths or frequencies. Without intending to limit the scope of the claims, according to an aspect of Applicant's invention as claimed in claim 12, only mirrors are used to provide the negative dispersion in the resonator to partially compensate for or counteract the positive dispersion of the remaining components of the resonator of the laser arrangement. Accordingly, as shown, for example, in Fig. 1, telescope 18 or other dispersive mirrors of the resonator are used to provide the negative dispersion, and thus a dispersion of a higher order can be avoided or minimized. Thus, as discussed at page 6 and page 8 of the Specification, and as shown in the table on page 22 of the Specification, higher order dispersion can be avoided or minimized by the use of mirrors as the only means of producing the negative dispersion. The mirrors are chosen to provide a dispersive effect in accordance with the other components and conditions of the resonator with a view to compensating for, or partially compensating for, the positive dispersion.

Cho discloses the use of prisms to introduce a negative dispersion within the resonator (Cho, page 561, right-hand column, near top). Cho discloses two variants, with a negative total dispersion of -340 fs,^{2} and a variant with a relatively high positive total dispersion of $+390$ fs^2 (Cho, page 561, paragraph bridging left- and right-hand columns). Cho discloses the problem of turning on and

stabilizing the laser and use of a saturable Bragg reflector, and the displacement of a mirror in front of this reflector (Cho, page 561, left-hand column, near middle), and that a pair of prisms within the resonator may make adjustment easier to accomplish the stabilization of the laser device when operation is started (Cho, *id.*).

Cho describes a problem of pulse formation when a totally positive dispersion of the resonator is used, and discusses transformation-restricted pulses and the use of specially designed chirped mirrors, gratings or prisms as chirp-compensation (Cho, page 562, left-hand column, second complete paragraph). Here, Cho does not clarify the specific design of these mirrors and other devices or whether they have a negative dispersion, and further, Cho emphasizes the equivalence, with respect to the pulse formation, of prism compressors and other resonator structures. Thus, the chirped mirrors mentioned are not described as introducing a negative dispersion for partial compensation of the positive dispersion of the resonator itself.

Accordingly, Cho does not disclose or suggest the recitations of claim 12, including, a short-pulse laser arrangement comprising a plurality of mirrors, wherein the entire negative dispersion portion of the resonator is determined only by the dispersive mirrors with negative dispersion.

Szipocs discloses mirrors with negative dispersion for a resonator of a short-pulse laser device. However, Szipocs does not disclose or suggest that the entire negative dispersion portion of the resonator is determined only by dispersive mirrors. Further, Szipocs does not disclose or suggest using only such dispersive mirrors to provide the negative dispersion to partially compensate for positive dispersion and, therefore, to yield a positive averaged dispersion for the resonator. Accordingly, even taken together in combination, Szipocs and Cho do not disclose or suggest the recitations of claim 12.

Cunningham does not cure the above-noted deficiencies of Cho and Szipocs as they relate to the above-cited features of claim 12.

Additional Argument for Non-Obviousness

Moreover, it is respectfully submitted that the recitations of claim 12 would not have been obvious based on the cited art because using mirrors exclusively for negative dispersion to compensate

in part the positive dispersion would not have been obvious to a person of ordinary skill in the art. In fact, at a time after the priority date of the present application, scientists adhered to the concept of using total dispersion of the laser resonators in the negative range, apparently, because it may have seemed safer to them than using an average positive dispersion with its various disadvantages, see, for example, "Compact femtosecond lasers based on novel multipass cavities" by A. Senaroglu et al., IEEE Journal of Quantum Electronics, Vol. 40, No. 5, May 2004, pp. 519-528, III Experiments, A, page 523, left-hand side, and B, page 525, left-hand side, showing total dispersions of the resonator of $-224\ fs^2$ and $-230\ fs^2$, respectively. Thus, prisms and the like were used for this purpose. Accordingly, Applicant's invention as claimed in claim 12 would not have been obvious based on Cho and Szipocs.

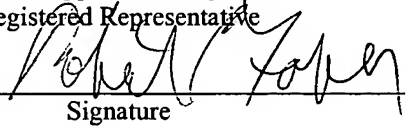
Claims 13-20 depend from claim 12 and are therefore patentably distinguishable over the cited art for at least the same reasons.

In view of the foregoing discussion, withdrawal of the objections and the rejections and allowance of the claims of the application are respectfully requested.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 10, 2008

Robert C. Faber

Name of applicant, assignee or Registered Representative



Signature

January 10, 2008

Date of Signature

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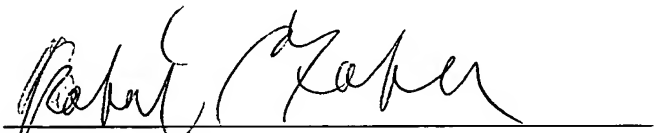
Respectfully submitted,



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